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IS 9737 (1981): Dimensions for Modular Units for Machine Tool Construction - Headstocks [PGD 3: Machine Tools]

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IS : 9737 - 1981

Machine Tools, Machine Tool Elements & Woodworking Machines Sectional Committee, EDC 11; Panel for Modular Units for Machine Tools, EDC 11/P-26 [Ref: Doc: EDC 11(3203)]

Indian Standard

(Reaffirmed 2003)

DIMENSIONS FOR MODULAR UNITS FOR MACHINE TOOL CONSTRUCTION — HEADSTOCKS

1. Scope — Specifies certain dimensions relating to the interchangeability of headstocks used in special purpose machines constructed from modular units.

1.1 This is applicable using flange mounted motors only.

2. Nominal Sizes — The nominal size of a headstock unit shall be given by the nominal width of the saddle on the related slide unit (*see* IS : 9722-1981 'Dimensions for modular units for machine tool construction — slide units').

3. Dimensions and Other Requirements

3.1 *Range of Nominal Sizes from 125 to 250 mm* — As specified in Table 1.

3.1.1 Either a tenon drive or a shaft and key may be used.

Note — The height h_2 of the centre of the driving spindle shall be in accordance with the values given in Table 1.

3.2 *Range of Nominal Sizes from 320 to 800 mm* — As specified in Table 2.

3.2.1 Either a coupling, or gear drive or any other suitable form of drive may be used.

Note — The height h_2 of the centre of the driving spindle shall be in accordance with the values given in Table 2.

4. A typical application example for the machine tool has been given in Appendix A.

5. Designation — A headstock unit of nominal size 250 shall be designated as:

Head Stock Unit 250 IS : 9737.

Adopted 10 February 1981

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Price Rs 7.00 Gr 3

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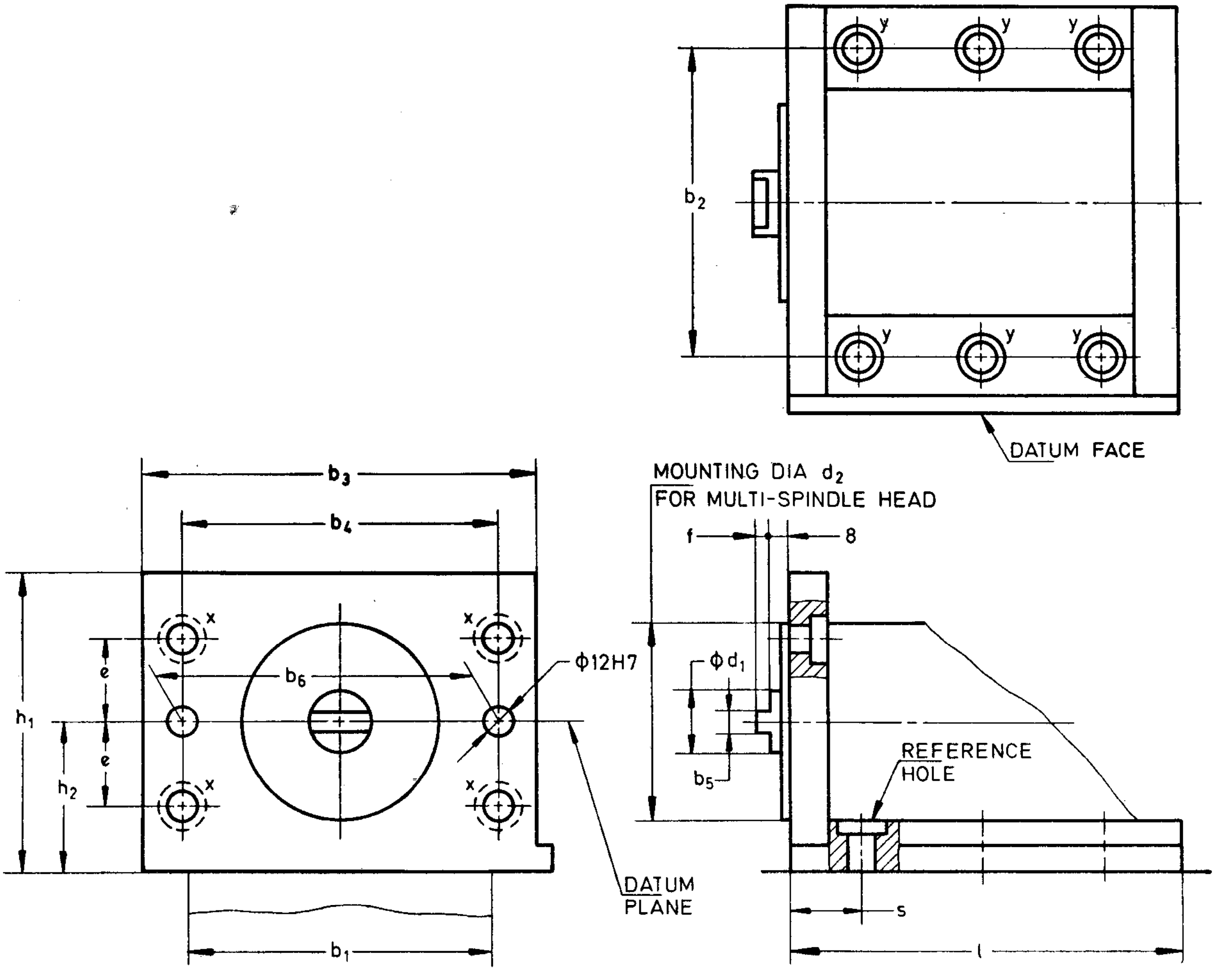
TABLE 1 DIMENSIONS OF HEADSTOCK UNITS (RANGE 125 TO 250 mm)

(*Clauses* 3.1 *and* 3.1.1)

All dimensions in millimetres.



$b_6 = b_4$

$S = 25$ or whole multiples of 25

Nominal* Size b_1	b_2 ±0.2	b_3	b_4 ± 0·2	b_5 e8	d_1†	d_2 j6	e ± 0·2	f	h_1	h_2 ± 0·05	l	Clearance Holes x and y to Suit Bolt Size
125	100	160	130	8	25	80	35	6	125	63	160	M10
160	135	200	170	8	32	80	50	6	160	80	200	M10
200	170	250	220	12	40	100	65	10	200	100	250	M12
250	220	320	290	12	50	100	90	10	250	125	320	M12

*Conforms to nominal width of saddle.

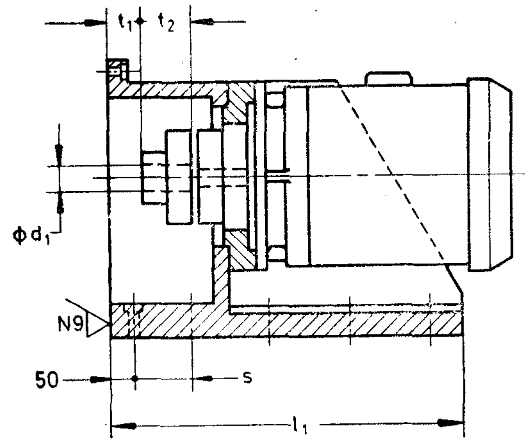
†Two alternative methods of location are permitted as follows:

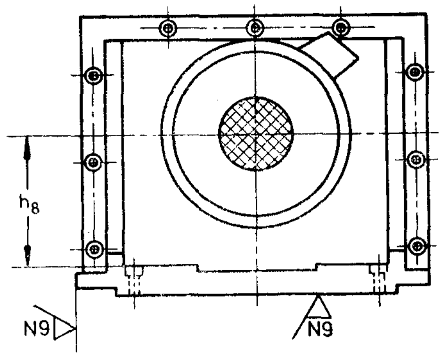
i) By means of spigot d_2 in association with one dowel hole, or
ii) By means of two dowel holes and without using spigot d_2.

TABLE 2 DIMENSIONS OF HEADSTOCK UNITS (RANGE 320 TO 800 mm)

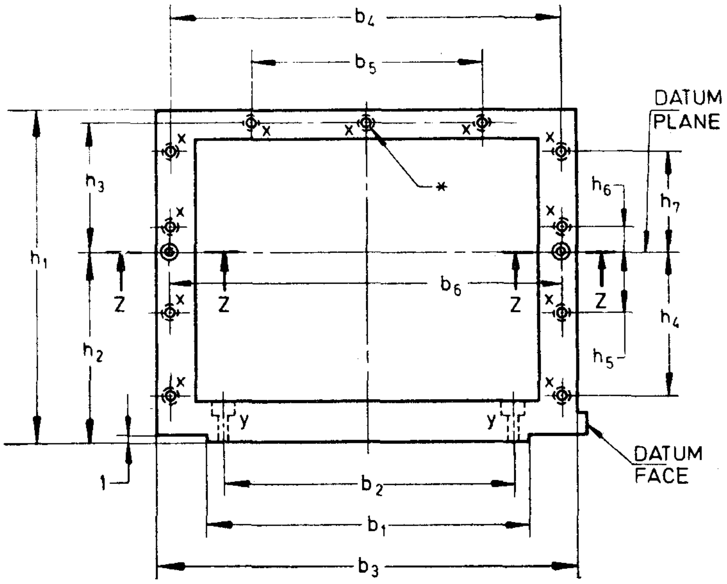
(*Clauses* 3.2 *and* 3.2.1)

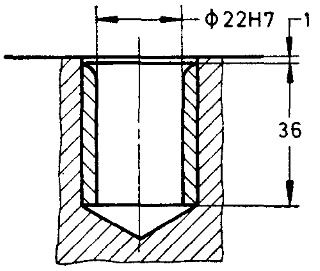
All dimensions in millimetres.





S = 25 or whole multiples of 25





ENLARGED SECTION ZZ

Centring mostly all sizes with bushes.

*This hole is not required on 320 mm nominal size.

(*Continued*)

TABLE 2 DIMENSIONS OF HEADSTOCK UNITS (RANGE 320 TO 800 mm) — *Contd*

Nominal* Size b_1	b_2 ± 0·2	b_3	b_4 ± 0·2	b_5 ± 0·2	b_6 ± 0·02	h_1	h_2 ± 0·05	h_3 ± 0·2	h_4 ± 0·2	h_5 ± 0·3	h_6 ± 0·2	h_7 ± 0·2	h_8 ± 0·2	l_1	d_1	Tolerance on d_1	t_1	t_2	Clearance Holes *x* and *y* to Suit the Bolt Size	Maximum Motor Frame Size IS : 2223-1971†
320	280	400	370	200	370	320	180	125	100	—	65	—	140	400	$\frac{28}{38}$	J6	40	60	M12	112 M
400	355	500	470	250	470	400	220	165	160	40	80	—	180	500	$\frac{38}{42}$	K6	50	70	M12	132 M
500	450	630	590	320	590	500	280	200	210	50	130	—	220	630	$\frac{42}{48}$		65	70	M16	160 L
630	580	800	760	450	760	630	360	250	275	115	50	190	280	800	$\frac{48}{60}$	m6	80	85	M16	200 L
800	740	1 000	960	600	960	800	450	330	350	150	50	250	360	1 000	$\frac{60}{75}$		100	110	M20 for *x* M16 for *y*	250 M

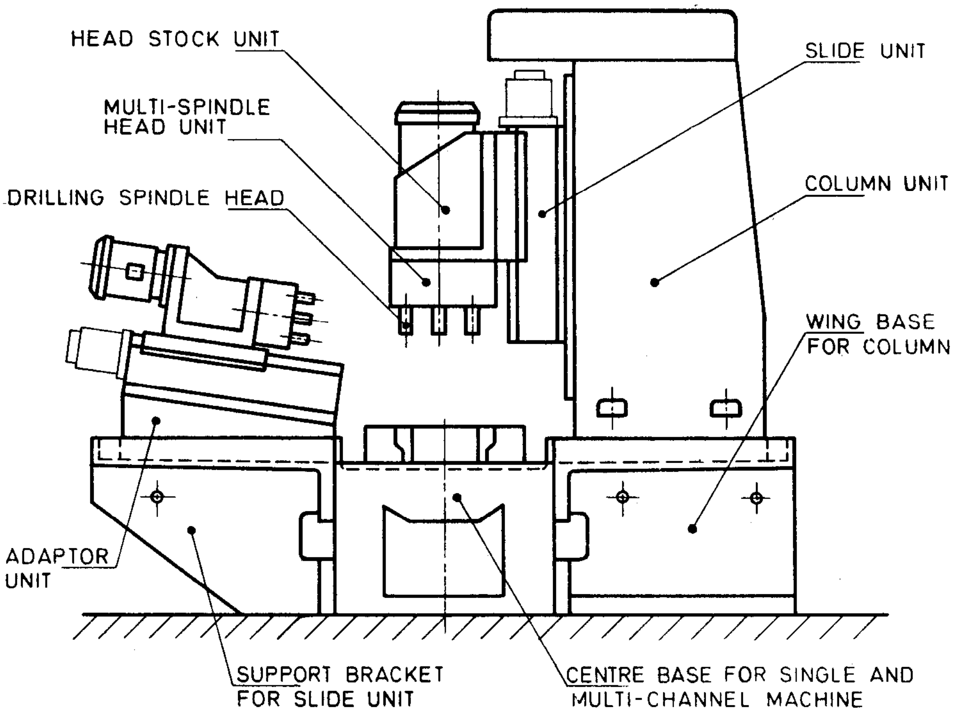
*Conforms to nominal width of saddle.

†Dimensions of flange mounted ac induction motors (*first revision*).

APPENDIX A

(*Clause* 4)

Typical application example for machine tool.



EXPLANATORY NOTE

In the preparation of this standard assistance has been derived from the following standards:

ISO 2727-1973 Modular units for machine tool construction — Headstocks

DIN 69611-1971 Machine tools; modular units; head stocks for multispindle heads according to DIN 69621-1979 Connecting dimensions

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